

PCT

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FR2004/002954

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-17 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-41 received by this Authority on 20.09.2005 with letter of 20.09.2005
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/12-12/12 as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>1-41</u>	YES
		Claims _____	NO
	Inventive step (IS)	Claims <u>1-41</u>	YES
		Claims _____	NO
	Industrial applicability (IA)	Claims <u>1-41</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
	Reference is made to the following document:		
	D1: EP 291131 A (EMERSON ELECTRIC CO.) 12 April 1989 (1989-04-12).		
	INDEPENDENT CLAIM 1		
	D1, which is considered to be the closest prior art, describes:		
	a self-contained portable electric power tool unit such as, for example, a secateur, a saw, a fruit-picking tool, a lawnmower, a scrub slasher, a hedge trimmer, an impact wrench, an electric hammer, including at least three separate functional sub-assemblies, namely a first sub-assembly (4) generating the mechanical action of the tool by means of an electric actuator connected, at least during use of the tool, via a flexible electric cord (5), to a second portable sub-assembly (2) constituting the electrical power source for the unit and essentially including a rechargeable electrochemical battery; a third charging sub-assembly (10) is electrically connected, during charging, via a disconnectable flexible cord (13) to the second sub-assembly (2) and is suitable for performing electrical recharging operations of the		

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

electrochemical battery of the second sub-assembly.

The subject matter of claim 1 differs from the unit of D1 in that:

- the electrical power of the actuator of the first sub-assembly can be cut off automatically when the battery reaches a low voltage threshold detrimental to the operation thereof;
- the second sub-assembly is provided, on the one hand, with a lithium-ion or lithium-polymer battery made up cells connected in series, such that each cell consists of one or more elements associated in parallel and, on the other hand, of one or more electric or electronic battery management modules for performing the task of protecting the battery against overcurrent; said module or modules being located close to said battery;
- the third sub-assembly consists at least of one electrical power source of which the voltage and the current are suitable for recharging the lithium-ion or lithium-polymer battery.

The subject matter of claim 1 is therefore novel (PCT Article 33(1) and (2)).

The problem addressed by the invention of claim 1 can be expressed as that of adapting the second and third sub-assemblies of D1 for operation with lithium-ion or lithium-polymer batteries.

To solve this problem, a person skilled in the art would

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not hesitate to modify the third sub-assembly so that the power source supplies a voltage and a current suitable for recharging a lithium-ion battery.

However, a person skilled in the art would not simultaneously think of providing the second sub-assembly with a device, located close to the battery, for protecting against overcurrent and a device for disconnecting the battery from the charging current when the battery reaches a low voltage threshold detrimental to the operation thereof.

The subject matter of claim 1 can therefore be considered inventive (PCT Article 33(1) and (3)).

Since they are dependent on claim 1, claims 2 to 41 can also be considered inventive.